

COLLECTION SYSTEM DESIGN SUMMARY

Design Flow – Refer to 327 IAC 3-6-11 for Design Flow Rate Requirements

| Description of Units Served | Design Flow Per Unit | Number of Units | Unit Design Flow |
|-------------------------------------|-------------------------|-----------------|------------------|
| <i>Example: Single family homes</i> | <i>310 gpd/unit</i> | <i>30</i> | <i>9,300 gpd</i> |
| | (gpd/unit) | | gpd |
| | (gpd/unit) | | gpd |
| | (gpd/unit) | | gpd |
| | (gpd/unit) | | gpd |
| | (gpd/unit) | | gpd |
| Average Design Flow | | | gpd |
| Peaking factor | Peak Design flow | | gpd |

Gravity Sewer Pipe Applicable Not Applicable

| Length | Diameter | Material | ASTM or AWWA Standard | SDR or DR | Pressure Class (psi) | Installation Method |
|--------------------------|---------------|------------|-----------------------|---------------|----------------------|---------------------|
| <i>Example: 1,525 ft</i> | <i>8-inch</i> | <i>PVC</i> | <i>ASTM D3034</i> | <i>SDR-35</i> | <i>N/A</i> | <i>Open Cut</i> |
| ft | in | | | | | |
| ft | in | | | | | |
| ft | in | | | | | |
| ft | in | | | | | |
| ft | in | | | | | |

Force Main Pipe and Low Pressure Sewer Applicable Not Applicable

| Length | Diameter | Material | ASTM or AWWA Standard | SDR or DR | Pressure Class (psi) | Installation Method |
|--------------------------|---------------|------------|-----------------------|---------------|----------------------|---------------------|
| <i>Example: 1,525 ft</i> | <i>8-inch</i> | <i>PVC</i> | <i>ASTM D2241</i> | <i>SDR-21</i> | <i>200 psi</i> | <i>Open Cut</i> |
| ft | in | | | | | |
| ft | in | | | | | |
| ft | in | | | | | |
| ft | in | | | | | |
| ft | in | | | | | |

Connection Location(s)

Example: The proposed sanitary sewer shall connect to an existing 8-inch sewer located approximately 10 ft north and 10 ft west of the intersection of Main Street and Park Avenue and to an existing lift station located approximately 20 ft southeast of the intersection of Oak Lane and Maple Drive.

The proposed _____ shall connect to _____ located _____.

Inspection / Maintenance

Inspection during construction will be provided by _____

Maintenance after completion will be provided by _____

Wastewater Treatment

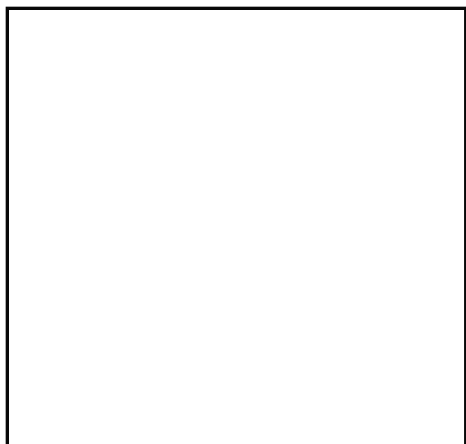
Wastewater treatment will be provided by _____

Lift Station Applicable Not Applicable

1. Location: _____

2. Type of pump (example: submersible, dry pit): _____

| | | |
|--|--|---|
| 3. Number of pumps: | | |
| 4. Constant or variable speed: | | |
| 5. Design pump rate (gpm) and TDH (ft): | | |
| 6. Operating volume of the wet well (gal): | | |
| 7. Average detention time in the wet well (min): | | |
| 8. Type of standby power/pump provisions: | | |
| 9. Type of alarm: | | |
| 10. Additional information: | | |
| | | |
| Low Pressure Sewer Grinder Pump Station | | <input type="checkbox"/> Applicable <input type="checkbox"/> Not Applicable |
| 1. Number of stations: simplex duplex triplex | | |
| 2. Number of residential connections per simplex station (two maximum): | | |
| 3. Design pump rate (gpm) at maximum TDH (ft): | | |
| 4. Type of alarm: | | |
| 5. Privately or utility owned and maintained: | | |
| 6. Additional information: | | |
| | | |
| Vacuum Pump Station | | <input type="checkbox"/> Applicable <input type="checkbox"/> Not Applicable |
| 1. Location: | | |
| 2. Total volume of vacuum tank (gal): | | |
| 3. Operating volume of the vacuum tank (gal): | | |
| 4. Number and size (HP) of vacuum pumps: | | |
| 5. Number and type of sewage pumps: | | |
| 6. Constant or variable speed: | | |
| 7. Design pump rate (gpm) and TDH (ft): | | |
| 8. Type of standby power/pump provisions: | | |
| 9. Type of alarm: | | |
| 10. Additional information: | | |
| | | |
| Certification Seal, Signature, and Date | | |
| Printed Name of Engineer or Land Surveyor | | |
| Signature | | Date Signed (<i>month / day / year</i>) / / |



A factor of four (4) is prescribed by 327 IAC 3-6-11. However, an alternative peaking factor may be justified by other means (327 IAC 3-6-32) or as provided by Ten State Standards 11.243: **Peaking Factor = (18 + √P) / (4 + √P)**, where P = population in thousands.

Provide pump and system curves and design calculations for TDH. If connecting to an existing force main, provide upstream lift station pump curves and describe how the proposed flow will affect the lift station performance during simultaneous operation.

For small diameter low-pressure sanitary sewer systems, provide a spreadsheet that includes the maximum expected simultaneous operation of the proposed grinder pumps, maximum expected flow (gpm) and fluid velocity (ft/sec), static head and accumulated friction loss, and expected accumulated total dynamic head (TDH).

The average detention time in the wet well (cycle time between pump on/off settings) should be between 5 and 30 minutes. The cycle time may be calculated from the following equation: **Cycle Time = (V / (D - Q)) + (V / Q)**, where D = discharge flow rate out of the wet well (design pump rate) in gpm, Q = inflow rate into wet well (average design flow) in gpm, and V = operating volume of wet well (between pump on/off settings) in gallons.